

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING

PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)



To:

YOU ME Patent & Law Firm

Teheran Bldg., 825-33 Yoksam-dong, Kangnam-ku, Seoul 135-080, Republic of Korea

Date of mailing
(day/month/year) 24 MARCH 2005 (24.03.2005)

Applicant's or agent's file reference
OPP031431KR

IMPORTANT NOTIFICATION

International application No.

PCT/KR2003/002479

International filing date (day/month/year)

18 NOVEMBER 2003 (18.11.2003)

Priority date (day/months/year)

27 NOVEMBER 2002 (27.11.2002)

Applicant

DONGJIN SEMICHEM CO., LTD. et al

1. The applicant is hereby notified that International Preliminary Examining Authority transmits here with the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**
The applicant must enter the national phase before each elected office by performing certain acts (filing translations and paying national fees) within 30 month(s) from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details in the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/KR



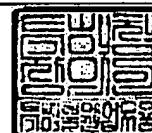
Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

COMMISSIONER

Telephone No. 82-42-481-5281



RPPER

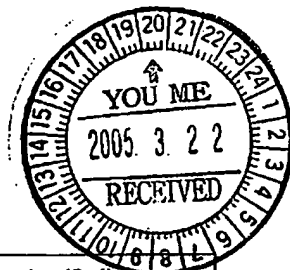
PCT/KR2003/002479

PATENT COOPERATION TREATY

PCT



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference OPP031431KR		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR2003/002479	International filing date (day/month/year) 18 NOVEMBER 2003 (18.11.2003)	Priority date (day/month/year) 27 NOVEMBER 2002 (27.11.2002)	
International Patent Classification (IPC) or national classification and IPC IPC7 C08K 5/107, C08G 77/18, B32B 27/38, G03F 7/004			
Applicant DONGJIN SEMICHEM CO., LTD. et al			

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>	
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>	

Date of submission of the demand 01 JUNE 2004 (01.06.2004)	Date of completion of this report 18 MARCH 2005 (18.03.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer HONG, SUNG RAN  Telephone No. 82-42-481-8146

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/002479

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION

International application No.

PCT/KR2003/002479

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

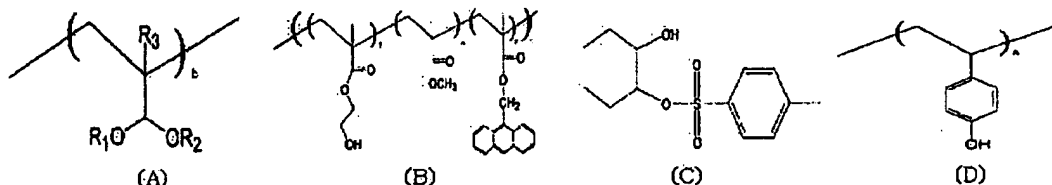
Novelty (N)	Claims	1 - 11	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1 - 11	NO
Industrial applicability (IA)	Claims	1 - 11	YES
	Claims	NONE	NO

2. Citations and explanations (Rule 70.7)

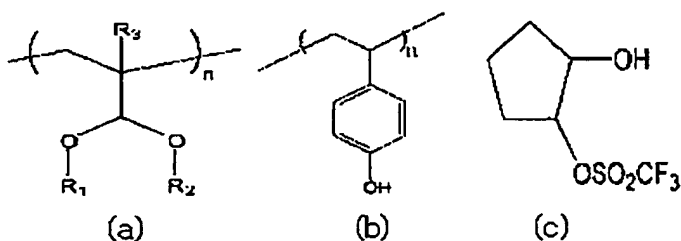
Reference is made to the following document:

D1 : KR 2001-18906 A (Hynix Semiconductor Inc.)

The present invention according to claims 1-11 relates to an organic anti-reflective composition, a patterning method using the same and a semiconductor device prepared by using the same patterning method. This organic composition comprises a crosslinking agent(A), a light absorbing agent(B), a thermal acid generator(C), an organic solvent(D) and an adhesivity enhancer(E).



Document D1 is considered to represent the most relevant state of the art, discloses an organic polymer for preventing anti-reflection comprising a polymer of formula 1 as a crosslinking agent(a), a polyvinylphenol of formula 6 as a photo-absorbing agent(b), a thermal acid generator of formula 7(c) and an organic solvent(d).



(Continued on Supplemental Box.)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/002479

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

BOX V.

Comparing the present invention with D1, both inventions are the same in preparing an organic anti-reflective composition comprising a crosslinking agent, a light absorbing agent, a thermal acid generator, and an organic solvent.

An adhesivity enhancer(E) in the present invention is used for effectively solving the standing wave effect and significantly preventing pattern collapse of photosensitizer on top of the organic anti-reflective film. However, it can be already used in the document D1 as a photo-absorbing agent or light-absorbing agent. And the (B) component is also a light-absorbing agent. So, it is obvious for the person skilled in the art that the (B) and (E) components in the present invention can be chosen together as a light absorbing agent.

Also, a thermal acid generator(C) in the present invention is same in the role of generating a thermal acid, comparing with (c) in document D1. It is also obvious for the person skilled in the art that a thermal acid generator can be used as a catalyst even if the chemical structure is slightly different.

So, claims 1-11 are trivial and not capable of supporting the requirements of inventive step under PCT Article 33(3).

Consequently, claims 1-11 are novel and also appear to be industrially applicable, but not inventive.

PATENT COOPERATION TREATY

WO 2004/048458
PCT/KR2003/002479

From the INTERNATIONAL BUREAU

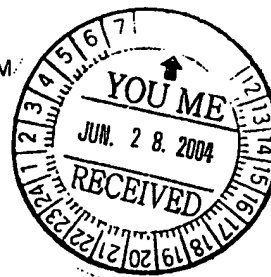
PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

YOU ME PATENT & LAW FIRM
Teheran Bldg., 825-33
Yoksam-dong, Kangnam-ku
135-080 Seoul
RÉPUBLIQUE DE CORÉE



Date of mailing (day/month/year) 10 June 2004 (10.06.2004)		
Applicant's or agent's file reference OPP031431KR		IMPORTANT NOTICE
International application No. PCT/KR2003/002479	International filing date (day/month/year) 18 November 2003 (18.11.2003)	Priority date (day/month/year) 27 November 2002 (27.11.2002)
Applicant DONGJIN SEMICHEM CO., LTD. et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:

AU, AZ, BY, CH, CN, CO, DZ, EP, HU, JP, KG, KP, MD, MK, MZ, RU, TM, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AG, AL, AM, AP, AT, BA, BB, BG, BR, BW, BZ, CA, CR, CU, CZ, DE, DK, DM, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, KE, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, SC, SD, SE, SG, SK, SL, SY, TJ, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 10 June 2004 (10.06.2004) under No. WO 2004/048458

4. **TIME LIMITS for filing a demand for international preliminary examination and for entry into the national phase**

The applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be 30 MONTHS from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of 19 months from the priority date, but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see *PCT Gazette* No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the *PCT Newsletter*, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

For filing a demand for international preliminary examination, see the *PCT Applicant's Guide*, Volume I/A, Chapter IX. Only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Idhir Britel
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